ZERUST® EXCOR®

VALENO® Film

EXCOR® VALENO® films combine the established anti-corrosion effect of EXCOR® with the wide range of functions and applicationsof polyethylene films which are highly valued in the packaging sector.

VALENO® is available in various formats – including flat, tubular and semi-tubular film, gusset bags, box covers, pouches, pressure lock bags, pre-cut pieces, shrink film, bubble wrap, and film for automatic machines. In addition to the anti-corrosion effect, it can be combined with features such as UV protection, high mechanical strength, transparency, flame-retardant properties, and ESD protection. As soon as packaged goods are wrapped in EXCOR® VALENO® film, the EXCOR® VCI anti-corrosion ingredients that have so far been locked in the polymer matrix of the film are released – as a gas on both sides. Because it is active on both sides, EXCOR® VALENO® film counteracts any error by the user. The user does not need to take account of any specific active direction. Depending on design, it protects specific metals and alloys – in direct contact and via the vapor phase in sealed packaging. The anti-corrosion properties meet the standards of TL 8135-0043, Level 3.

VALENO® is guaranteed to provide its anti-corrosion effect for at least 2 years under normal conditions of use. If the application instructions and specific logistical and technical packaging requirements are observed, long-term corrosion protection of up to 15 years is possible.

When the VALENO® film is opened, the protective film evaporates from the metal surface without any residue within 1 to 2 hours and the packaged goods can be used without any further processing.

ADVANTAGES

effective on both sides, even at high relative humidity (≤ 98 %)

no danger from skin contact or inhalation if used properly

meets TL 8135-0043, Level 3

the recipient gets dry, clean, and corrosion-free parts that are ready to fit

practical for customs inspections: Excor® Valeno® films are transparent

EXCOR®: The corrosion protection that comes from the packaging!

Protective effect*

Type E: steel, cast steel, partly galvanized steel, Cr, Al 4xxx (Si > 7%), cast iron

Type NE(C): Cu, brass, Al 2xxx (Cu) and 5xxx (magnesium) possible

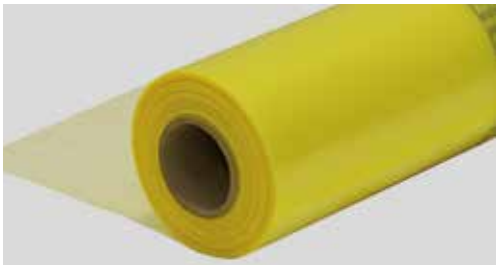
Type NE(S): Ag, Cu, brass, Al 2xxx (Cu) and 5xxx (magnesium) possible

Type MM: steel, galvanized and tin-plated steel, Cu, brass, aluminum 2xxx (Cu), Al 4xxx (Si > 7%), 5xxx (Mg), 6xxx (Mg, Si), 7xxx (Zn), other Al alloys on request, combinations of the above metals

Type A: steel, galvanized steel, Cu, brass, aluminum 2xxx (Cu), Mg alloys possible, cast iron

* For metal parts with unusual surface finishes, e.g. very rough surfaces or adhesive residues from processing agents, it is advisable to carry out tests using model packaging in a climate that simulates actual conditions before using EXCOR® VCI materials on a large scale. Climate test cabinets and chambers (up to a volume of 16 m³) are available for this purpose at EXCOR® Korrosionsforschung GmbH in Dresden.

VALENO® Film



Technical data

Brief description	EXCOR® VALENO® anti-corrosion film is a polyethylene film with VCI active ingredients that take effect on both sides and that are integrated into the polymer matrix.				
Dosage	1 m² of film can protect up to 10 m² of metal surface. As factors such as pretreatment of the parts, packaging design, and logistics processes can influence the protective effect, technical coordination of the dosage may be advisable. Our application engineers will be happy to advise you.				
Passivation phase of the active ingredient	Approx. 1 hour in an enclosed and sealed packaging space of 1 m³ and at a temperature of 20 °C. The closer the packaged goods to be protected are to the VCI dispenser, the shorter the passivation phase.				
Effective period	Up to 2 years from production if application instructions are observed. If the application instructions and specific logistical and technical packaging requirements are observed, long-term corrosion protection of up to 15 years is possible.				
Storage	EXCOR® VALENO® can be stored for up to 3 years as delivered, protected from direct sunlight, moisture, and dirt and under normal storage conditions.				
Approvals	Approved by: Audi AG, BMW AG, Daimler AG, Volkswagen AG				
Technical data	Film density	DIN EN ISO 1183-1	0.91–0.98 g/ cm³		
		(100 µm)		norm. qual.	S-qual.
	Tensile strength*	DIN EN ISO 527-3/2/200	longitudinal	≥ 18 MPa	≥ 31 MPa
			transverse	≥ 17 MPa	≥ 28 MPa
	Elongation at break*	DIN EN ISO 527-3/2/200	longitudinal	≥ 480%	≥ 580%
			transverse	≥ 560%	≥ 680%
	Puncture resistance*	ASTM D 1709/A		≥ 160 g	≥ 510 g
	Water vapor permeability* (23°C, 85% rel. humidity)	DIN 53122-1 for d >= 100µm		≤ 1 g/(m² x d)	
	Surface resistance (Standard)	DIN EN 61340-5-1		$R_s > 10^{14}$ Ω	
	Welding properties	Impulse welding			
		Cut and seal welding			
Quality assurance	For each production run of VCI packaging, EXCOR® checks representative samples for the content of corrosion inhibitors. The emission rate of the VCI components is checked by sampling. TÜV Süd certifies the testing, measurement methods, and QM processes used.				

ISO 9001 Certified Quality Management System
www.tuv-sud.com/ms-cert

Delivery forms

Flat film
Tubular film
Semi-tubular film
Film for automatic machines
Pre-cut pieces
Bubble wrap
Stretch film
Pouches
Pressure lock bags
Gusset bags
Box covers
etc.

Thickness 25–250 µm
Special films with extra strength

Optional:
- customized printing
- shrinkable
- ESD protection to DIN EN 61340-5-1 (Rs = 10^9–10^{11} Ω)
- flame-retardant to DIN 4102-B2 (at d ≥ 80 µm)
- defined transparency to ASTM D 1003 (HAZE < 28%)

Disposal

Can be recycled for materials or energy in accordance with local regulations.
Review safety datasheet.

Health

Classification not required under 1272/2008/EC (CLP Regulation on Classification, Labelling and Packaging of Substances and Mixtures).

No risk to the skin in dermatological testing.

No monitoring required under TRGS 615 and TRGS 900.

Contact us at:

ZERUST® EXCOR®

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